

Abstract of the Disclosure

Control systems and methodologies are disclosed for controlling a process having one or more motorized pumps and an associated motor drives, which comprise selecting a desired operating point within an allowable range of operation about a process setpoint according to performance characteristics associated with a plurality of components in the process, and controlling the system according to the desired operating point. The control system comprises a motor drive providing electrical power to a motor in a controlled fashion according to a control signal, and a controller providing the control signal to the motor drive according to a desired operating point within an allowable range of operation about a process setpoint. The controller selects the desired operating point according to one or more performance characteristics or criteria associated with a plurality of components in the process, such as cost, throughput, lifetime, or the like. Also disclosed are methods and systems for diagnosing operating conditions in a pump or other motorized device.